Performance Evaluation of the Arabic Language Multimedia Instruction: *Malaysian Perspective*

Qais Faryadi PhD Candidate (**Date: 11-3-2008)**

Faculty Information Technology & Quantitative Sciences, UiTM, Malaysia

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Abstract

This Study evaluated the effectiveness of the Arabic language multimedia products exist in Malaysian markets. For the purpose of careful investigation, this research has applied blended models of the most trusted instructional design based on the field-tested theories of the most outspoken educational psychologists such as Mayer (2002), Keller (1988) and Gagne (1985) as a basis for critical evaluation of these Arabic multimedia products. This evaluation after rigorous investigation has identified a total of 13 Arabic products available to teach Arabic as foreign language to Malaysian 3rd grade students.

Shocking results from these three products in specific checklists indicated that out of 31 requirements, product 1 gained 26 (83.8%) negative (No) grades with only 5 (16.12%) positive (Yes) grades. Product 2 earned 24 (77.7%) negative (No) marks out of 31 requirements with only 7 (22.5%) positive (Yes) marks. Product three did not perform well either. Results showed that product three gained 22 (70.9%) negative (No) grades with only 9 (29.03%) positive (Yes) outcome. Similar shocking results from these three products in general checklists indicated that out of 49 requirements, product 1 gained 40 (81.6%) negative grades of (No) with only 9 (18.4%) positive (Yes) grades. Product 2 earned 36 (73.4%) negative (No) marks out of 40 requirements with only 13 (26.5%) positive (Yes) marks. Product three did not perform well either. Results showed that product three gained 35 (71.4%) negative (No) grades with only 14 (28.5%) positive (Yes) outcome.

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Introduction

Malaysia is a growing nation in the area of e-publishing. Information technology is reshaping Malaysian educational system (Neo, 2005). Multimedia instructional materials to teach the Arabic language are seen every where. Unfortunately, the majority of these Arabic instructions are not based on scientific research and field tested paradigm of foreign language acquisition (Mayer, 2001). As a fast way of making money, Arabic e-publishers produce instant Arabic instructional materials and fail to consider educational and socio-cultural context of language learning process (Cullen, 1999). Instructional materials are produced in a variety of forms and overcrowded with beautiful graphics and many animations resulting in student's memory overload (Mayer, 2003). These unknown quality instructions impair learners' progress.

As such, the prime responsibility of the publishers as well as the authors is to prognosticate their instructions before supplying to schools or markets for public use (Mikk & Luik, 2003). As a matter of fact these poorly designed multimedia instructions failed to impress everyone. Many instructors and students have negative experiences with the available multimedia instructions in the classrooms as well as in the markets. If this practice is left unchecked, sadly, these inexperienced designers do more harm than good to our learning and teaching institutions (Ludwig, 2004).

Criteria for a Feasible Multimedia Instructional Design:

Literature Review

Multimedia must be carefully designed and thoughtfully evaluated before implementation. The prime message of multimedia instruction is to help learners to learn meaningfully. Meaningful learning is accomplished only with the presentation of appropriate multimedia materials in the instruction while avoiding those little redundant animations and sound

from occupying the valuable part of learner's short term memory (Mayer & Moreno, 2002). Unrelated information needs to be avoided because it impairs the learning process. Instructors have to present information in different modalities to motivate and engage learners to learn the best way possible (Chong, 2005). Research from empirical evidence concluded that multimedia instruction is very effective if it is used efficiently and thoughtfully. In fact in this research students learnt more in a short time and improved their mental model in acquiring new knowledge (Singh, 2003).

Multimedia instructional design undoubtedly has the potential to improve learning outcome. Multimedia is self-explanatory and assists learners to be engaged in discovery learning provided that it must be well designed and theoretically researched product. Moreover, materials like sound, text, narrations and animations must be carefully positioned and unwanted jargon must be eliminated (Roy 2005; Mayer & Lonn, 2001). Instructors must realize that learning happens when learners are motivated and actively involved in problem solving transfer. In designing the multimedia instruction, instructors must balance three crucial components in their instructions to arouse learner's cognitive process. These important components require careful information selection, information organization and information integration. Only then, instructors can offer a new vision of learners as an active, dynamic, thinker and problem solver (Mayer, 1999). The design of teaching and learning environment must be based on a purpose.

Its goals and objectives should be clear to the learner as well as to the instructor. Instructional activities must be applicable to the mental map of the learner and it ought to be relevant with the existing knowledge of the learner in order to create a new knowledge. Multimedia learning instructions should have stimulus-based activities to surprise learners. That's how an instructor maintains and continues to maintain learner's attention. In the process instructor may pose a problem in such a way that arouses learners' critical thinking and problem solving capabilities (John & Duffy, 1995).

In fact one of the main goals of the instructor in designing multimedia instruction should be to assist the learner to become a *little thinker* in a given situation. In turn, the role of the instructor in any given setting should be that of a friendly-consultant.

In designing multimedia instruction, the job of the instructor is to arrange the learning environment with his/her meaningful instruction. In doing so the instructor has to follow certain important principles of a good instructional design.

These principles are explained by (Lebow, 1993) as follows:

- Elimination of unwanted and redundant information
- Provide an opportunity for the learner to be in control
- In designing instruction have a living and a solid reason
- Provide an opportunity for the learner to take responsibility
- Engage the learner in critical thinking and problem solving process.

According to Gagne (1985) an instructor must provide adequate instruction to the learner to learn effectively. The instructor must make sure that each instruction is mastered before going to the next level. Gagne classifies learning into five major categories such as, verbal information, intellectual skills, cognitive strategies, motor skills and attitudes (Robert & Piskurich, 2006). He pointed out that in order to learn effectively, different internal and external conditions are very crucial for each type of the learning process. According to this theory, internal conditions are the state of the mind like attention, motivation and remembrance. It is the kind of skills and capabilities which the learner has mastered already. While external conditions refer to the learners' actions, such as arrangement of motivational events and more importantly its timing. Gagne (1985) argued that there are five dynamic conditions which actively contribute in a knowledge transfer:

1. Verbal information:

   Verbal information is something to do with cognitive information processing like a computer. In another words previous information is stored in the memory of the learner such as facts, principles and procedures. It will be available when needed. So it is automatic and it does not require how to do things.

2. Intellectual skill:

It indicates learner's capability to distinguish objects such as symbols; features and the learner must be able to identify white color from the black. He should be able to differentiate a smooth surface from that of a rough. More over, the learner must have basic skills on concepts and problem solving skills.

3. Cognitive Strategies:

In this situation learner is in control of the situation. He/she learns based on trial and error. As such, the learner learns in multiple situations while monitoring their own behavior to achieve an outcome. In this kind of situation the duty of instructor is to pose a problem and leave it to the learners to critically analyze and respond.

4. Attitudes:

According to this theory attitudes consist of sets of values which a learner gives to certain situations. It is an internally motivated process. If there is more internal motivation then there will be more achievement. As a result of internal motivation, the learner will show more positive attitudes towards completion of a particular task, so the instructor has to assist the learner by motivating him/her to achieve positive outcomes.

5. Motor skills:

Gagne views that learning happens when a learner is physically ready to learn. The learner must be physically fit to perform a task.

In order to construct a feasible instructional design, Mayer (2001) suggests eight characteristics of a good instructional design:

1. Multimedia Principle: Students can learn better from words illustrated by pictures rather than mere words alone.

2. Contiguity Principle: Students can learn better if the words and pictures are presented concurrently rather than to be presented individually.

3. Coherence Principle: Students can learn better if all redundant words, sounds and pictures are excluded from the instruction.

4.   Modality Principle: Students can learn better if words are supplemented with narration rather than just appear as text on the screen.

5.   Redundancy Principle: Students can learn better if words are presented as a narration rather than narration and text on the screen.

6.   Interactivity Principle: Students can learn better if they are allowed to be engaged personally.

7.   Signaling Principles: Students can learn better if narrated information is divided into small segments for easy comprehension.

8.   Personalization Principle: Students can learn better if information is presented to them as a conversation.

Significance of the Study

The amazing discovery of this critical investigation is a breakthrough for the future Multimedia instructional designers on the process of a viable and workable instructional design to acquire Arabic as a foreign language in Malaysian environment. The finding of this investigation also provides procedural frameworks for a well-organized production of multimedia instructional design. This study also helps instructors and designers on how to develop a sustainable instruction based on the integration and combinations of field-tested modalities of instructional intervention.

Objectives

The prime objective of this appraisal was to carefully investigate and critically analyze the efficiency and effectiveness of the Arabic multimedia instructional design in Malaysian markets. In the process of investigation, this research has determined a viable and workable Arabic language multimedia courseware as a possible solution to the impaired and ineffective instructional design available in the market.

Methods

For the purpose of investigating the fidelity and usability of the Arabic Language multimedia instruction available in Malaysian markets, the investigator advocated a blended models of the most trusted instructional intervention based on the theories of the most outspoken and prominent psychologists such as Mayer (2001), Keller (1988) and Gagne (1985) as the basis for the critical analysis of these Arabic multimedia instructions. In this investigation the researcher identified a total of 9 Arabic Language multimedia products in Malaysian markets. The available instructional materials were categorized into three major classes according to their relevancy and usability. In the process 3 instructional materials were marked as appropriate for 3rd grade learners, 3 marked as inappropriate and 3 marked as repetitive. As a result of rigorous and deliberate investigation of these categories, 6 instructional materials marked as not suitable to Malaysian 3rd grade primary school children to learn Arabic as a foreign language. The remaining of 3 Arabic instructional materials were marked as relevant and thus, meticulously evaluated to find out whether these products can meet the apparatus of a good instructional design to teach the Arabic Language.

Instruments

In order to guarantee the reliability and validity of the instruments used in this investigation, the researcher submitted the instruments to a panel of multimedia instructional experts, professionals in the Arabic and English Languages for their perusal. Furthermore, a copy of the research questions, problems, goals, objectives and the course outline were also given to these experts for further advice. Feedbacks obtained from the experts were used to strengthen suitability, reliability and validity of the instruments. In this critical appraisal, instruments used to collect data were (i) A pre-determined **general** checklists was used by the researcher to evaluate the fidelity and usefulness of the available Arabic instructional design in Malaysian markets as a general criteria for a viable and workable multimedia instructions. (ii)

Similar pre-determined **specific** checklists also used to examine whether these Arabic multimedia instructions are based on any field-tested modality of multimedia instruction intervention. The instruments (general and specific checklists) were created and developed based on state of the art modalities of the most trusted instructional intervention based on the theories of the most outspoken and prominent psychologists such as Mayer's (2003) "Nine Ways to Reduce Cognitive Load in Multimedia Learning", Gagne's (1985) "Nine Steps of Instructional Events", Keller's (1988) "ARCS Model of Motivational Design" and Reigeluth's (1999) "Seven Steps of Elaborative Theory of Instructional Design". (iii) In-depth literature review of instructional design was also carried out to investigate the latest modalities, discoveries and scientific findings about multimedia instructional design. The findings from literature review were also applied to these Arabic multimedia instructions to test their reliability and usefulness.

Data Analysis

Quantitative and qualitative data were analyzed rigorously using SPSS 12.0. Products were categorized into three major classes according to their relevancy to 3rd graders of primary school children. T-test was carried out to find out if there exists any significant difference in educational value among the 3 multimedia instructional designs to teach Arabic as a foreign language to Malaysian settings.

Findings and Discussions

In this study, the available Arabic instructional materials were categorized into three major classes according to their relevancy and usability. 5 Arabic multimedia products marked as inappropriate, because these Arabic products were designed and then imported from the Arabic speaking countries and the content is not suitable for Malaysian settings. Investigation indicated that 5 out of 13 products were marked as repetitive. As a result of rigorous and deliberate investigation of these categories, 10 instructional materials marked as not suitable to Malaysian 3rd grade primary school children to learn Arabic as a foreign language.

The remaining of 3 Arabic instructional materials were marked as relevant and thus, meticulously evaluated to find out whether these products can meet the apparatus of a good instructional design to teach the Arabic Language. In this critical evaluation (general checklists with 40 requirements) and (specific checklists with 31 requirements) were created and developed based on the theories of the most outspoken and prominent psychologists such as Richard E. Mayer's Nine Ways to Reduce Cognitive Load in Multimedia Learning, Robert Gagne's Nine Steps of Instructional Events, John Keller's ARCS Model of Motivational Design and Reigeluth's Seven Steps of Elaborative Theory of Instructional Design.
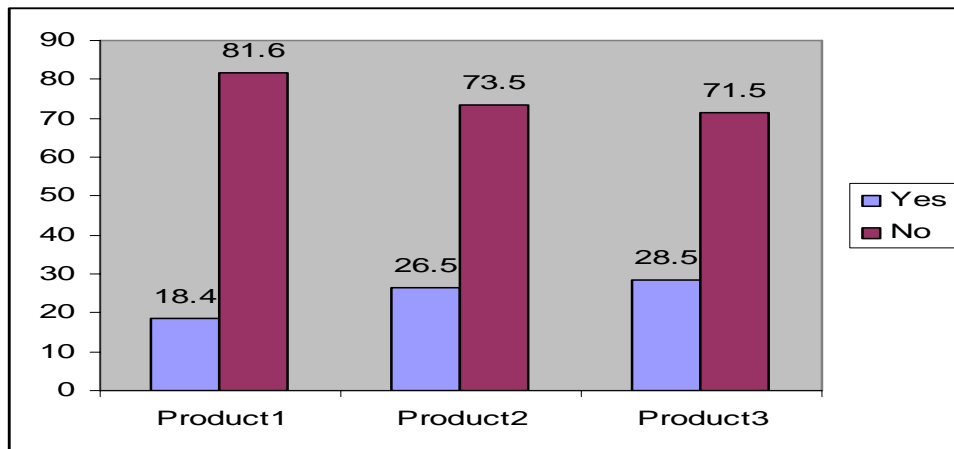
The General Checklist Results

Shocking results from these three products in general checklists indicated that out of 49 requirements, product 1 gained 40 (81.6%) negative grades of (No) with only 9 (18.4%) positive (Yes) grades. Product 2 earned 36 (73.4%) negative (No) marks out of 40 requirements with only 13 (26.5%) positive (Yes) marks. Product three did not perform well either. Results showed that product three gained 35 (71.5%) negative (No) grades with only 14 (28.5%) positive (Yes) outcome. The positive mean score of these three products were 12 (24.5%) while the negative mean score were noted at 37 (75.5%).

Table 1:   Percentage of Products' Performance

General Checklist [49 requirement]				
	Yes	%	No	%
Product 1	9	18.4	40	81.6
Product 2	13	26.5	36	73.4
Product 3	14	28.5	35	71.5
Mean	12	24.5	37	75.5

Figure 1: Products' Positive and Negative Performance

It is shocking to note that product 1, 2 and 3 did not perform well based on the 49 general requirements of good instructional design criteria. It is crucial to note that product 1, 2 and 3 mean negative scores were 81.6 %, 73.5 % and 71.5 % respectively. The positive performance of these three products was equally discouraging. It is discouraging to note that the mean positive scores of these three products stood at 18.4%, 26.5% and 28.5 % respectively.

Specific Checklist Results

Shocking results from these three products in specific checklists indicated that out of 31 requirements, product 1 gained 26 (83.8%) negative (No) grades with only 5 (16. 2%) positive (Yes) grades. Product 2 earned 24 (77.7%) negative (No) marks out of 31 requirements with only 7 (22.5%) positive (Yes) marks. Product three did not perform well either. Results showed that product three gained 22 (70.9%) negative (No) grades with only 9 (29.01%) positive (Yes) outcome.   Shocking results from these three products in specific checklists indicated as in Table 2 and   Figure 2

Table 2: Percentage of Products' Performance

Specific Checklist [31 requirement]				
	Yes	%	No	%
Product1	5	16.2	26	83.8
Product2	7	22.5	24	77.7
Product3	9	29.1	22	70.9
Mean	7	23	24	77

Figure 2: Products' positive and Negative Performance

It is shocking to note that product 1, 2 and 3 did not perform well based on the 31 specific requirements of good instructional design criteria. It is important to note that product 1, 2 and 3 mean negative scores were 83.8 %, 77.7 % and 70.9 % respectively. The positive performance of these three products was also discouraging. It is crucial to note that the mean positive scores of these three products stood at 16.2%, 22.5% and 29.1 % respectively.
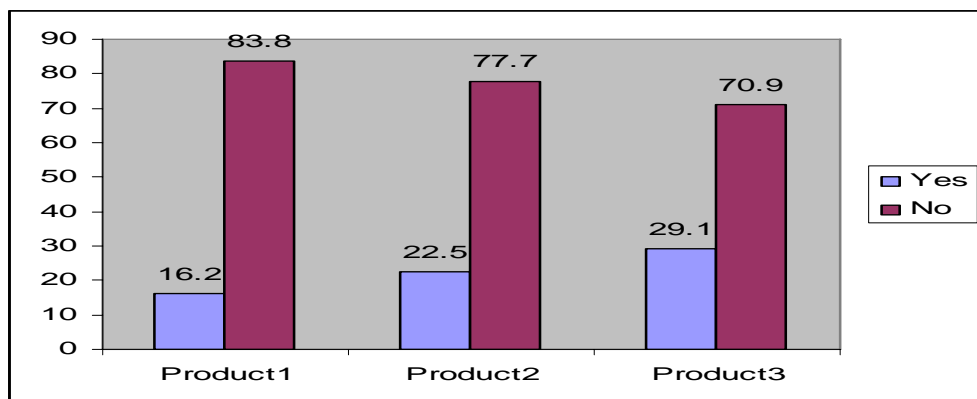
Critical analyses on Screenshots of the Products

Figure 3: Product 1

Beautiful graphics are on the screen (Figure 3). Unfortunately, learner's memory is overloaded. The animations and graphics are occupied most of the screen. As such, this page has simply exceeded the processing capacity of short term memory of the learner. Study concluded that learners learn better if all redundant information is excluded from the instruction (Mayer, 2003).

Figure 4: Product 1


The Arabic text is smaller than the graphics in Figure 4. The designer has spent much time on the graphics and sidelined the importance of the Arabic text. Quality of the graphics is far better than the quality of the Arabic Text. Many animations and graphics are not relevant for fruitful learning outcomes. Empirical research has found that relevancy increases motivation (Keller, 1988).

Figure 5: Product 2

This is the product 2 menu (Figure 5). It looks like one size fits all. But study has indicated that one size never fits all (Amita, 2006).The page is overcrowded with redundant information and poor graphic construction.   This courseware is meant for commercial rather than designed for a constructive learning, especially for primary children.   There is a background sound being played through the entire courseware distracting the attention of the learner.   Study indicated that learning is impaired by unnecessary content resulting in poor performance (Chong, 2005).   Study has found that in less loaded fact but quality learning is better than more (Mayer, 1996).

Figure 6: Product 2
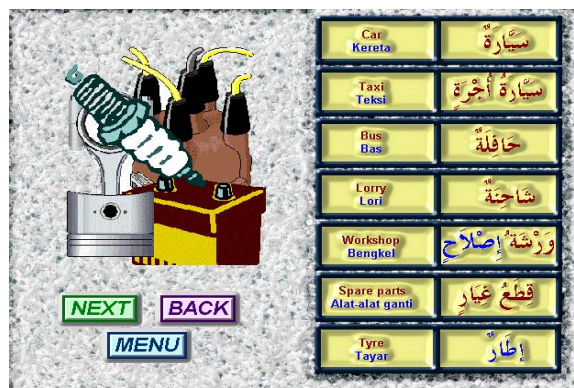
This page has very poor graphics freely downloaded from the internet (Figure 6). The text clashes with the background. Words presentation is very poor. Study has   found that learners understand better if words are presented as narration (Mayer, 2001).

Figure 7: Product 2
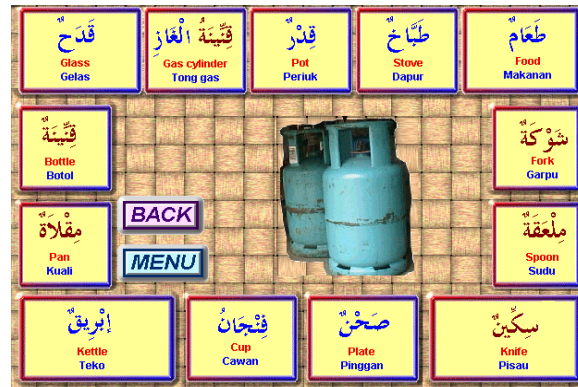
In this page there are few grammatical mistakes (Figure 7). 'Tabbakhun' in Arabic Language means Cook. Here the author wrongly stated as stove. Gas Cylinder is singular but the picture shows plural confusing the learner between plural and singular form.

Figure 8: Product 3

This page is overcrowded with Arabic letters (Figure 8). Many animations and graphics are on the screen and constantly popping out. Information is not divided into segments. There is a background sound as well as moving objects everywhere distracting learner's attention. Study warns that unwanted and redundant information distracts leaner's attention (Lebow, 1993).

Conclusion

This critical appraisal evaluated the effectiveness of the Arabic language multimedia courseware exist in Malaysian markets. For the purpose of careful investigation, this research has applied blended models of the most trusted instructional design based on the field-tested theories of the most outspoken educational psychologists such as Mayer (2002), Keller (1988) and Gagne (1985) as a basis for critical evaluation of this Arabic multimedia courseware. This evaluation after rigorous investigation has identified a total of 9 products available to teach Arabic as foreign language to Malaysian 3rd grade students. As a result of deliberate inquiry, this investigation has identified a total of nine instructional materials in the markets. These available Arabic instructions were categorized based on their educational value as well as their relevancy to Malaysian 3rd grade school children. In the process, six Arabic instructions were marked not suitable to Malaysian 3rd graders as these instructions were designed for the trade purpose rather than educating the students.

Three Arabic instructions were graded as repetitive and were not chosen for the evaluation. Another remaining three Arabic instructions were marked relevant to Malaysian 3rd grade students and therefore, mercilessly investigated to find out whether these products can meet the apparatus of a good instructional design in teaching Arabic as a foreign language to Malaysian 3rd grade students. Results indicated that all three products in specific requirements did not follow any apparatus of viable and workable instructional design criteria. Shocking results from these three products in specific checklists indicated that out of 31 requirements, product 1 gained 26 (83.8%) negative (No) grades with only 5 (16.12%) positive (Yes) grades.

Product 2 earned 24 (77.7%) negative (No) marks out of 31 requirements with only 7 (22.5%) positive (Yes) marks. Product three did not perform well either. Results showed that product three gained 22 (70.9%) negative (No) grades with only 9 (29.03%) positive (Yes) outcome. Similar shocking results from these three products in

general checklists indicated that out of 49 requirements, product 1 gained 40 (81.6%) negative grades of (No) with only 9 (18.4%) positive (Yes) grades. Product 2 earned 36 (73.4%) negative (No) marks out of 40 requirements with only 13 (26.5%) positive (Yes) marks. Product three did not perform well either. Results showed that product three gained 35 (71.4%) negative (No) grades with only 14 (28.5%) positive (Yes) outcome.

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Appendix

Criteria for a Good Educational Courseware (Malaysian Market Courseware)

Product 1-2-3

Please rate the following questionnaires on a scale of 1 to 5.

1.   This courseware has an author?

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

2.   In this courseware the author is qualified?

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

3.   In this courseware the author is reputable?

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

4.   In this courseware the objectives/goals are outlined.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

5.   This courseware is based on field-tested methodology.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

6.   The courseware is lesson based.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

7.   In this courseware the learning outcomes are identified.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

8. The courseware content is relevant to the audience.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree* *Strongly Disagree*

9. In this courseware the course content is validated.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree* *Strongly Disagree*

10. In this courseware there are activities to practice.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree* *Strongly Disagree*

11. In this courseware the learning activities are different.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree* *Strongly Disagree*

12. In this courseware the activities are related to real life.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree* *Strongly Disagree*

13. In this courseware the activities arouse thinking.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree* *Strongly Disagree*

14. In this courseware the feedbacks are morally sound.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree* *Strongly Disagree*

15. This courseware has redundant text.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree* *Strongly Disagree*

16. In this courseware the animations are destructive.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree* *Strongly Disagree*

17. This courseware requires installation.

1----	2----	3----	4----	5----
Strongly Agree	Agree	Natural	Disagree	Strongly Disagree

18. In this courseware media, animations and sound are relevant.

1----	2----	3----	4----	5----
Strongly Agree	Agree	Natural	Disagree	Strongly Disagree

19. In this courseware the quality of media is questionable.

1----	2----	3----	4----	5----
Strongly Agree	Agree	Natural	Disagree	Strongly Disagree

20. The media in this courseware is helpful for learning.

1----	2----	3----	4----	5----
Strongly Agree	Agree	Natural	Disagree	Strongly Disagree

21. In this courseware the media are integrated for better learning.

1----	2----	3----	4----	5----
Strongly Agree	Agree	Natural	Disagree	Strongly Disagree

22. In this courseware the media is relevant to the concept.

1----	2----	3----	4----	5----
Strongly Agree	Agree	Natural	Disagree	Strongly Disagree

23. In this courseware the graphics convey useful message.

1----	2----	3----	4----	5----
Strongly Agree	Agree	Natural	Disagree	Strongly Disagree

24. In this courseware the animations are difficult to load.

1----	2----	3----	4----	5----
Strongly Agree	Agree	Natural	Disagree	Strongly Disagree

25. In this courseware the quality of graphics is poor.

1----	2----	3----	4----	5----
Strongly Agree	Agree	Natural	Disagree	Strongly Disagree

26.   In this courseware the pictures convey wrong message.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

27.   The media in this courseware attracts attention.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

28.   The media and the text in this courseware are distanced.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

29.   In this courseware media and text are not concurrent on the page.

1----   2----   3----   4----   5----

Strongly Agree   Agree   Natural   Disagree   Strongly Disagree

30.   In this courseware the texts are narrated in story form.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

31.   The language in this courseware is grammatically sound.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

32.   In this courseware the Arabic grammar is correct.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

33.   In this courseware text, animations, graphics are near to each other.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

34.   The courseware encourages engagement.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

35. In this courseware the examples are biased.

1----   2----   3----   4----   5----

Strongly Agree *Agree* *Natural* *Disagree* *Strongly Disagree*

36. There are many mistakes in this courseware.

1----   2----   3----   4----   5----

Strongly Agree *Agree* *Natural* *Disagree* *Strongly Disagree*

37. In this courseware the narration is not clear.

1----   2----   3----   4----   5----

Strongly Agree *Agree* *Natural* *Disagree* *Strongly Disagree*

38. The navigation in this courseware is easy.

1----   2----   3----   4----   5----

Strongly Agree *Agree* *Natural* *Disagree* *Strongly Disagree*

39. In this courseware the page design is consistent.

1----   2----   3----   4----   5----

Strongly Agree *Agree* *Natural* *Disagree* *Strongly Disagree*

40. In this courseware the links are properly placed.

1----   2----   3----   4----   5----

Strongly Agree *Agree* *Natural* *Disagree* *Strongly Disagree*

41. In this courseware graphics dominate the screen.

1----   2----   3----   4----   5----

Strongly Agree *Agree* *Natural* *Disagree* *Strongly Disagree*

42. In this courseware the font size is big enough.

1----   2----   3----   4----   5----

Strongly Agree *Agree* *Natural* *Disagree* *Strongly Disagree*

43. In this courseware the background clashes with the text.

1----   2----   3----   4----   5----

Strongly Agree *Agree* *Natural* *Disagree* *Strongly Disagree*

44.   In this courseware the students learn in groups.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

45.   This courseware has puzzles and quizzes.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

46.   In this courseware the learners are rewarded with marks.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

47.   In this courseware the lessons are repeated and revised.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

48.   Lessons in this courseware can be printed.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

49.   This courseware has a search function.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

50.   This courseware is attention seeker?

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

51.   The objectives of this courseware are clearly defined?

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

52.   This courseware stimulates the learner's prior knowledge?

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

53.   The content of this courseware is sequenced?

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

54.   This courseware provides guidance for the learner?

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

55.   This courseware provides ample practice for the learner?

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

56.   This courseware provides enough feedback for the user.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

57.   This courseware has assessment to know if the learner acquired knowledge.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

58.   This courseware is lesson based.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

59.   This courseware has a review for each lesson.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

60.   This courseware is interesting?

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

61.   This courseware makes learner curious to continue learning?

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

62. This courseware challenges the learner?

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

63. This courseware helps the learner to use the skill learnt later?

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

64. In this courseware the learner feels confident that he/she can learn.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

65. In this courseware learner feels satisfied that he/she is learning.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

66. This courseware is designed for the target audience.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

67. In this courseware the media selection is appropriate.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

68. This courseware has group learning as well as individual learning activities.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

69. This courseware eliminated unwanted and redundant information.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

70. This courseware provided opportunity for the learner to be in control.

1----   2----   3----   4----   5----

Strongly Agree *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

71. This courseware is designed based on a solid reason.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

72. This courseware engages learner in critical thinking.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

73. This courseware can be used in any classroom.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

74. This courseware is based on field-tested paradigm of learning.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

75. In this courseware the words are illustrated with pictures.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

76. In this courseware the words and the pictures are presented concurrently.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

77. In this courseware the words are supplemented with narration.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

78. In this courseware the information is presented in segments.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

79. In this courseware the information is presented as a conversation.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*

80.   The content of this courseware is experimented.

1----   2----   3----   4----   5----

Strongly Agree   *Agree*   *Natural*   *Disagree*   *Strongly Disagree*